

REMARKS

Claims 1-4 and 6-16 are pending. Claims 1 and 13 are independent. Claim 1 is amended.

Claims 13 and 14 have been rejected under 35 U.S.C. §102(b) as being anticipated by Okumura et al. (U.S. Patent No. 5,015,330). Applicant respectfully traverses this rejection.

Okumura et al. disclose a film forming method and film forming device including a reaction container into which semiconductor wafers are placed for processing. During processing, Okumura et al. disclose placing semiconductor wafer into the container and creating a Si_3N_4 film on the wafer. The silicon wafer is removed from the reaction container while purging the reaction container with a purge gas. See col. 11, lines 27-30; col. 12, lines 42-45; and col. 13, lines 13-18. Further, the removal of the wafer occurs as part of the cleaning step which only includes wafer unloading, transforming of etching gas into plasma, introducing the etching gas, and purging the interior of the reaction container.

Although Okumura et al. disclose purging the reaction chamber with a purge gas, Okumura et al. do not disclose "withdrawing said treatment gas from the chamber while injecting a moisture displacing gas into said chamber," as recited by claim 13. This feature of the present invention prevents moisture in the atmospheric air from penetrating the chamber.

Accordingly, claim 13 is allowable over the prior art. Regarding dependent claim 14, this claim is allowable for at least the same reasons as corresponding independent claim 13. Therefore, Applicant respectfully requests removal of this rejection.

Claims 1 and 4 have been rejected under 35 U.S.C. §102(e) as being anticipated by Kannan et al. (U.S. Patent 6,091,056). Applicant respectfully traverses this rejection.

Kannan et al. disclose a hot plate oven for processing flat panel displays and large wafers. During the wafer processing, hexemethyldisilane (HMDS) is added to the oven chamber under a vacuum. When the addition of HMDS is stopped, pure nitrogen is supplied to purge the oven chamber while the chamber is exhausted. (See column 3, lines 1-16).

Therefore, Kannan et al. do not disclose the specific method of purging the HMDS from the chamber because it is unknown whether or not Kannan et al. allows atmospheric air to enter the chamber during the purging process. As a result, Kannan et al. do not disclose, "preventing moisture in air from penetrating into the chamber by drawing out the surface treatment gas from the chamber while injecting a nitrogen gas into the chamber," as recited by claim 1 as amended.

Accordingly, claim 1 is allowable over the prior art. Regarding dependent claim 4, this claim is allowable for at least the same reasons

as corresponding independent claim 1. Therefore, Applicant respectfully requests removal of this rejection.

Claims 2, 3 and 6-8 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Kannan et al. in view of Bellows et al. (U.S. Patent No. 5,728,602). Applicant respectfully traverses this rejection.

As discussed above, Kannan et al. fail to teach all the features of claim 1 from which claims 2, 3 and 6-8 depend. Bellows et al. fail to make up for the deficiencies of Kannan et al.

Bellows et al. disclose a semiconductor wafer manufacturing process with high-flow rate low-pressure purge cycles. The process includes putting a process TEOS gas into a furnace to treat a wafer. After treatment, the TEOS gas and its reaction products are evacuated to create a vacuum in the furnace. The furnace is then backfilled with nitrogen.

In other words, Bellows et al. teach that the surface treatment gas is withdrawn prior to adding the nitrogen gas into the furnace. Therefore, Bellows et al. do not make up for above identified deficiency of Kannan et al. because Bellows et al. could not possibly teach, "preventing moisture in air from penetrating into the chamber by drawing out the surface treatment gas from the chamber while injecting a nitrogen gas into the chamber," as recited by claim 1 as amended.

Accordingly, claims 2-3 and 6-8 are allowable over the prior art for at least the same reasons discussed above with respect to corresponding

independent claim 1. Therefore, Applicant respectfully requests removal of this rejection.

Claims 15 and 16 have been rejected under 35 U.S.C. §103(a) as being unpatenable over Okumura et al. In view of Kannan et al. and Bellows et al. Applicant respectfully traverses this rejection.

As discussed above, Okumura et al. fails to teach all the features of independent claim 13. Also as discussed above, Kannan et al. and Bellows et al. have deficiencies similar to Okumura et al. Therefore, Kannan et al. and Bellows et al. do not make up for the deficiencies of Okumura et al.

Accordingly, claims 15 and 16 are allowable for at least the same reasons as corresponding independent claim 13.

Claims 9-12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kannan et al. in view of the prior art disclosed in pages 1-4 of the Specification. Applicant respectfully traverses this rejection.

As discussed above, Kannan et al., fails to teach every feature of independent claim 1 from which claims 9-12 depend. The Examiner relies on Applicants' own disclosure as making up for the deficiencies of Kannan et al. However, Applicant has not admitted that the information contained on pages 1-4 of the disclosure is actually "prior art" is a term of art within the patent field and has a specific meaning. If Applicant was aware that pages 1-4 and Figs. 1 and 2 contained prior art, Applicant

would have labeled Fig. 1 and Fig. 2 as such. Rather, Applicant has labeled Figs. 1 and 2 as "Background Art" which does not denote "Prior Art" because Applicant is not aware that pages 1-4 contain prior art.

The Examiner has provided his opinion as to why the disclosure on pages 1-4 contains prior art. However, Applicant respectfully submits that the Examiner has taken too broad a position in determining the "prior art." For example, the Examiner bases his rationale on the statements regarding the TFT of Fig. 1 and LCDs as discussed on page 1. However, the present invention is drawn to a method of preventing the generation of particles in a chamber during the formation of the TFT and/or LCD, rather than the actual TFT or LCD. Further, TFTs and LCDs may be formed by various methods known in the art. Therefore, just because TFTs and LCDs of Applicant's disclosure may be known (which Applicant does not admit) does not mean that the "Background Art" of Fig. 2 and discussion relative to Fig. 2 is "prior art."

Even assuming *arguendo* that pages 1-4 are prior art, pages 1-4 do not make up for the deficiencies of Kannan et al. In particular, page 3, lines 23 and 24 state that the pressure within the adhesive chamber is equalized to atmosphere pressure by allowing air to enter the chamber. Therefore, Applicant's disclosure does not teach, "preventing moisture in air from penetrating into the chamber by drawing out the surface treatment gas from the chamber while injecting a nitrogen gas into the

chamber,” as recited by claim 1 as amended. Rather, Applicant’s disclosure teaches allowing air to enter the chamber.

Accordingly, claims 9-12 are allowable for at least the same reasons as independent claim 1 from which they depend. Therefore, Applicant respectfully requests removal of this rejection.

CONCLUSION

The Examiner is respectfully requested to enter this Amendment After Final in that it raises no new issues and places the application in condition for allowance, or in the alternative better form for Appeal. Early and favorable notice to that effect is respectfully solicited.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

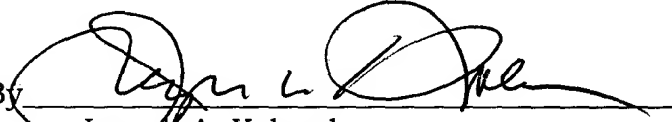
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to contact Jayne Saydah (Reg. No. 48,796) at (703) 205-8000, in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees

required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly,
extension of time fees.

Respectfully submitted,

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Attachment: Version With Markings Showing Changes Made

VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE CLAIMS

Claim 1 has been amended as follows:

1. (Twice Amended) A method of preventing generation of particles in a chamber, the method comprising:

mounting a substrate within a chamber of a gas-exposure equipment;

decreasing a pressure within the chamber;

injecting a surface treatment gas into the chamber, the surface treatment gas converting a surface of the substrate into an organic material; and

preventing moisture in air from penetrating into the chamber
by drawing out the surface treatment gas from the chamber while injecting a nitrogen gas into the chamber.